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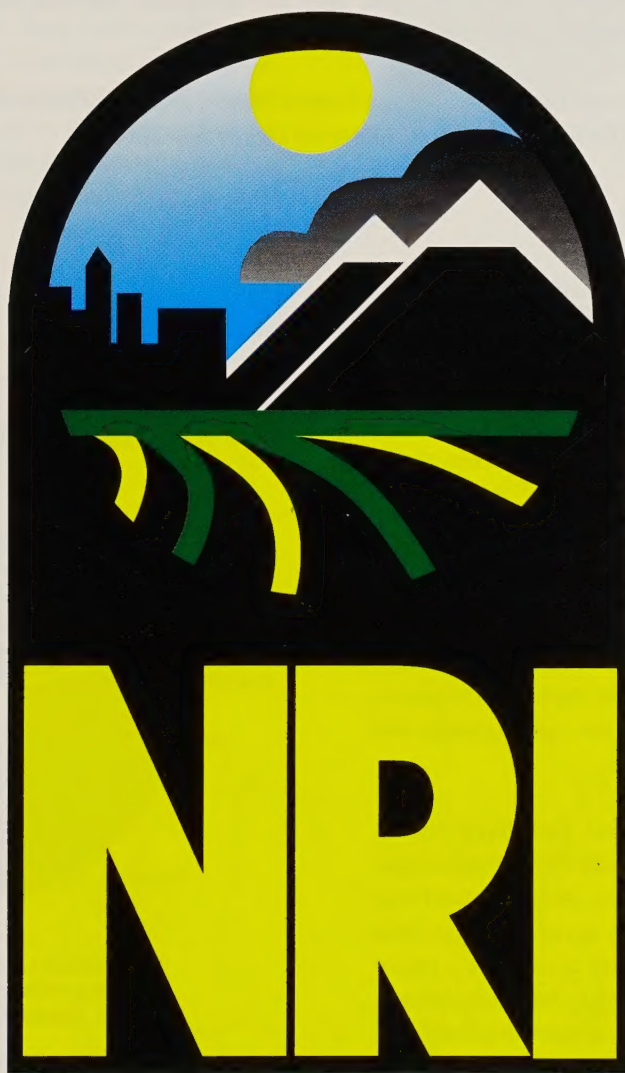
United States Department of Agriculture



National Resources Inventory

Highlights and Background

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1997 National Resources Inventory: *Highlights*

The National Resources Inventory (NRI) is a statistically based survey that has been designed and implemented using scientific principles to assess conditions and trends of soil, water, and related resources on nonfederal lands in the United States. The NRI is conducted by the U.S. Department of Agriculture's Natural Resources Conservation Service in cooperation with the Iowa State University Statistical Laboratory. It is a compilation of natural resources information on nonfederal land—over 75 percent of the Nation's total land area.

Data used for the NRI are collected using a variety of imagery, field office records, historical records and data, ancillary materials, and on-site visits. The data are compiled, verified, and analyzed to provide a comprehensive look at the state of the Nation's nonfederal lands.

The following highlights cover the conterminous United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands. These results are from the 1997 NRI (Revised December 2000).

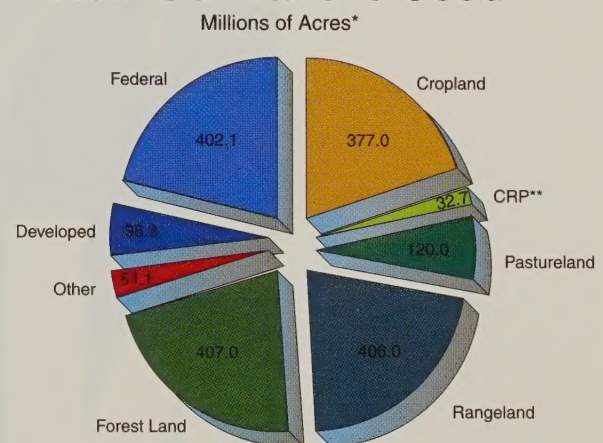
Land Use

There are about 1.5 billion acres of nonfederal land. Most of it is rangeland (27 percent), forest land (27 percent), and cropland (25 percent). Developed land accounts for less than 7 percent of nonfederal land, as of 1997. Federal land totals about 402 million acres, or approximately 21 percent of the total land area.

Land use is not static; it is surprisingly dynamic, with annual shifts in and out of different uses. In agriculture there are constant shifts in the use of land among cropland, pasture, range, and forest land to meet production needs, implement rotations of land in and out of cultivation, and maintain and sustain soil resources.

Cropland acreage decreased nationally by 44 million acres between 1982 and 1997. Pastureland decreased by 12 million acres, and rangeland was reduced almost 11 million acres. Forest land increased by nearly 4 million acres. Two major overriding factors contributing to land use changes between 1982 to 1997 were: 1) development and 2) implementation of the Conservation Reserve Program (CRP) in the mid-1980's. CRP is a Federal program designed to assist landowners in the conversion of highly erodible cropland to vegetative cover. In 1997 there were almost 33 million acres under CRP contract.

How Our Land is Used



*Non-Federal Land 1,492 million acres, including conterminous United States, Hawaii, Puerto Rico, and U.S. Virgin Islands.

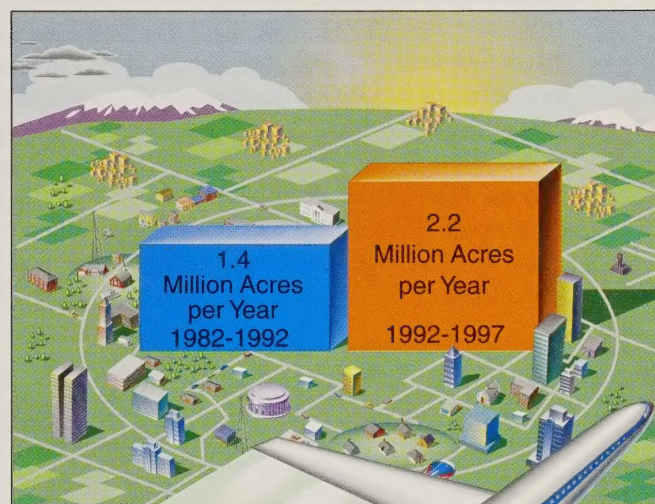
**Land under Conservation Reserve Program contract

Urbanization and Development

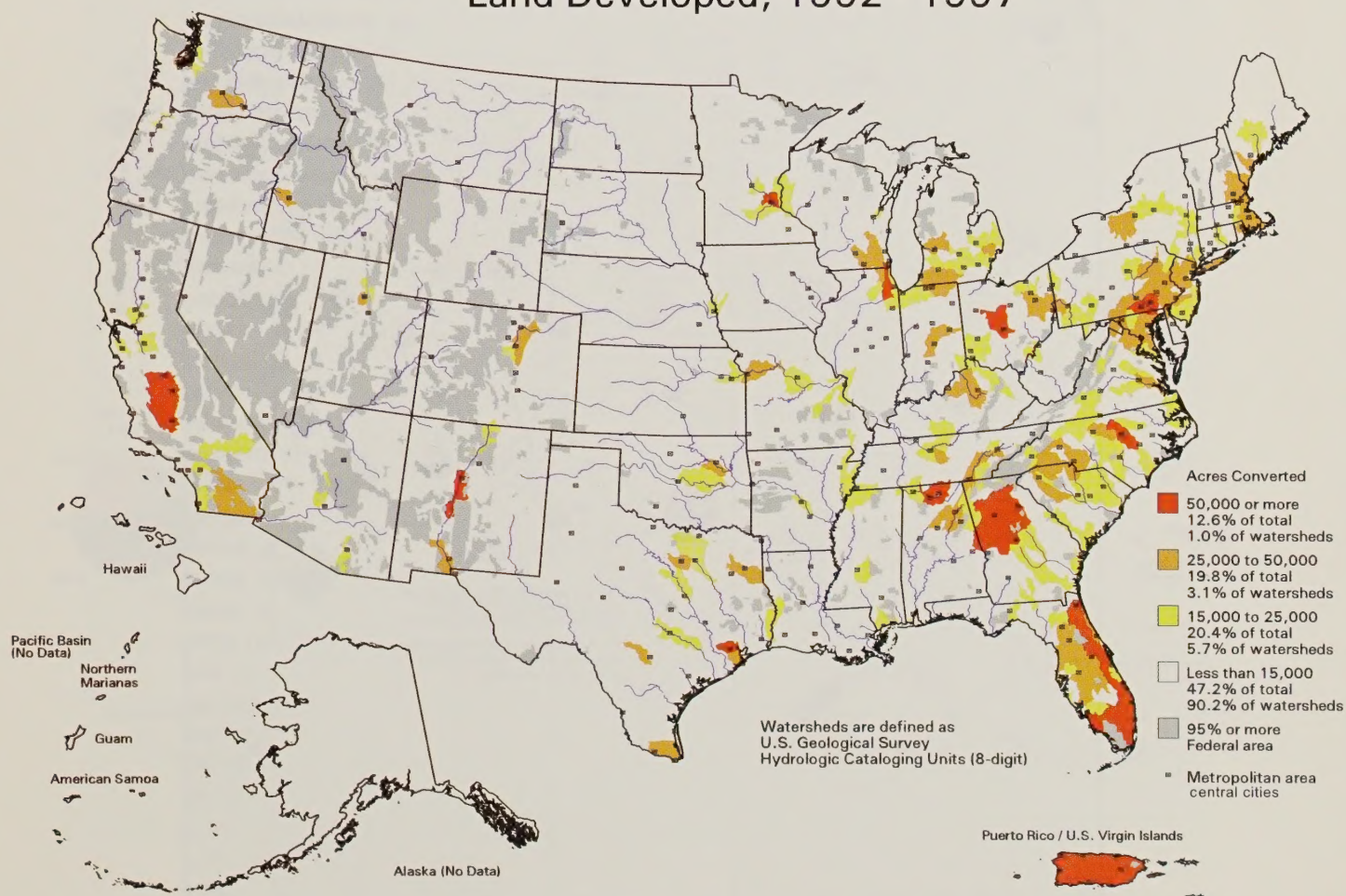
Developed land totaled a little over 98 million acres in 1997, almost 7 percent of the U.S. nonfederal land area. Over the 10-year period, 1982-92, urban development averaged 1.4 million acres a year. However, in the 5-year period between 1992 and 1997, the pace of development averaged 2.2 million acres a year, more than one and one-half times that of the previous 10-year period. From 1982-97, the acreage of developed land increased by more than 25 million acres, or 34 percent.

Although not considered a threat to the Nation's overall food production, land development and urbanization is a critical issue because it can lead to fragmentation of agricultural and forest land; loss of prime farmland, wildlife habitat, and other resources; additional infrastructure costs for communities and regional authorities; and competition for water.

Land Converted to Development



Land Developed, 1992 - 1997

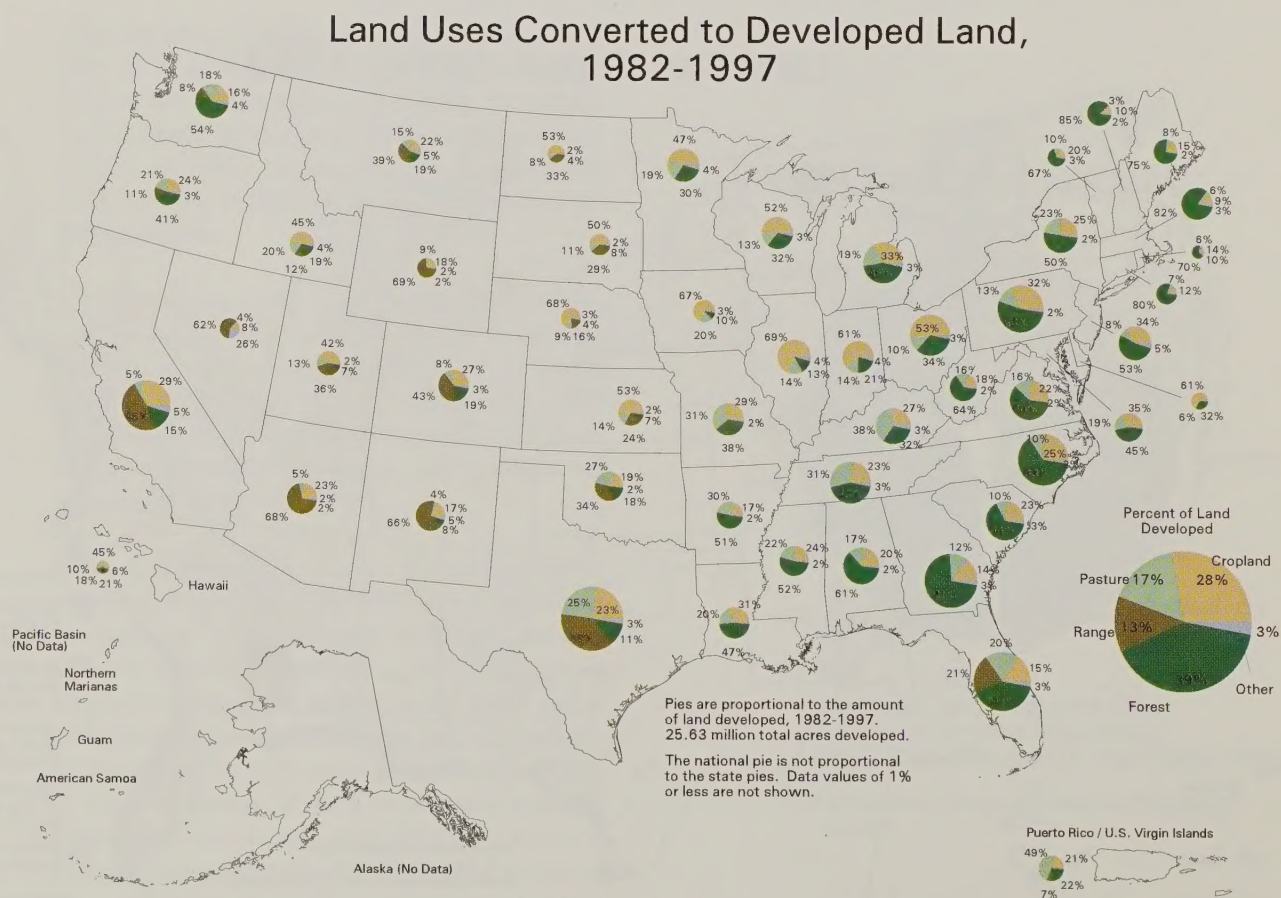


Over the 5-year periods, 1982-87, 1987-92, and 1992-97, converted prime farmland made up about 30 percent of the newly developed land. Between 1992 and 1997, more than 3.2 million acres of prime farmland were converted to developed land, an average of 645,000 acres of prime farmland per year.

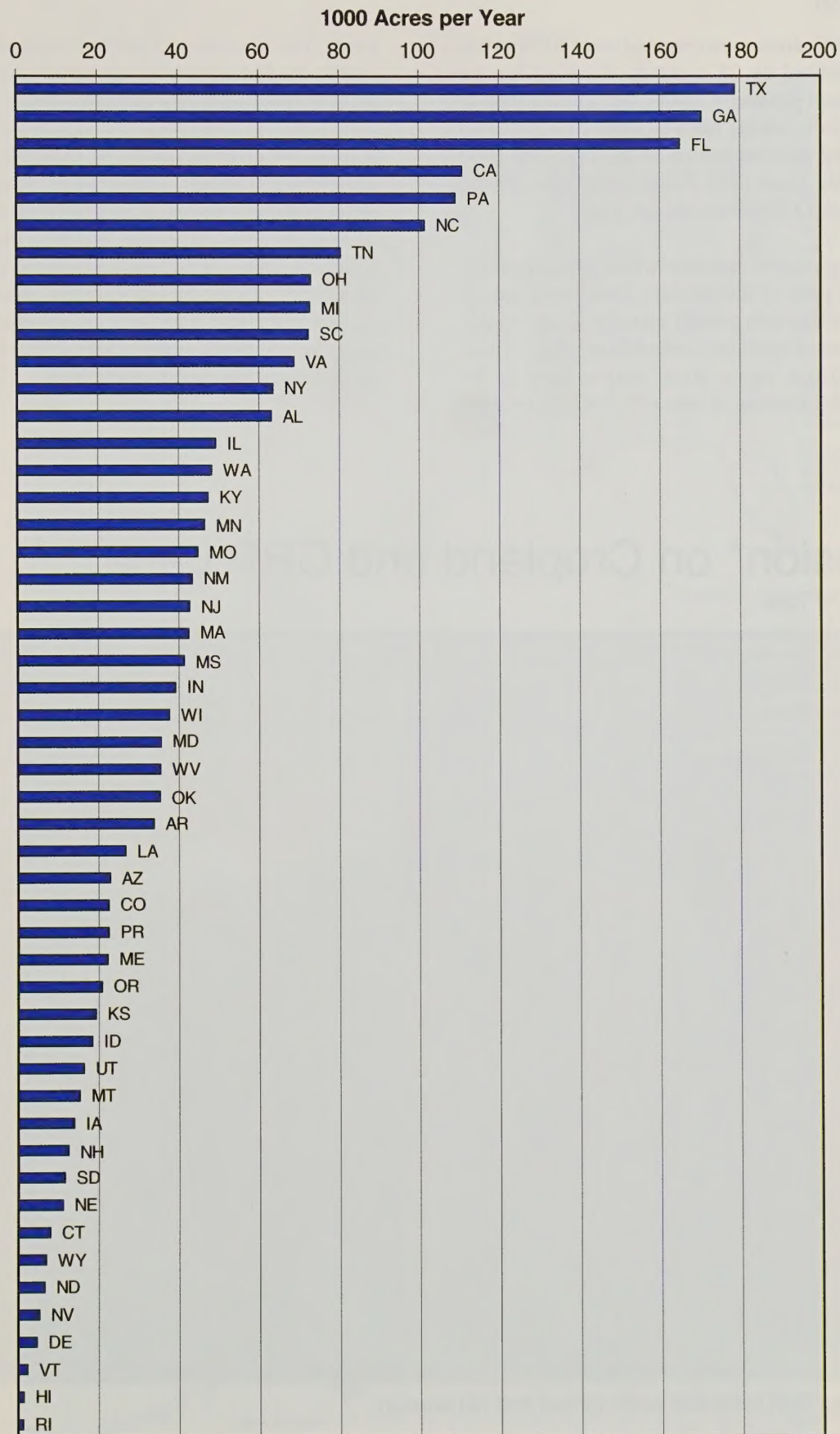
Forest land is the dominant land type being developed. Forest land and cropland combined make up two-thirds of the total acreage developed since 1982.

In 16 states, 50 percent or more of the acreage that had been developed since 1982 was developed between 1992 and 1997. Texas, Georgia, and Florida had the highest average annual rate of land development from 1992-97. In each of these States, an average of over 160,000 acres was developed per year between 1992 and 1997.

Developed land includes urban areas, small built-up tracts, and rural transportation land.



States Ranked by Average Annual Rate of Land Development, 1992-1997



Erosion

Since 1982, erosion on cropland and CRP land has been reduced by 38 percent. Stewardship by agricultural producers and private landowners on the Nation's working lands hit an all-time high with successful implementation of the 1985 and 1990 Farm Bills. Since 1995, though, erosion has leveled off at about 1.9 billion tons per year.

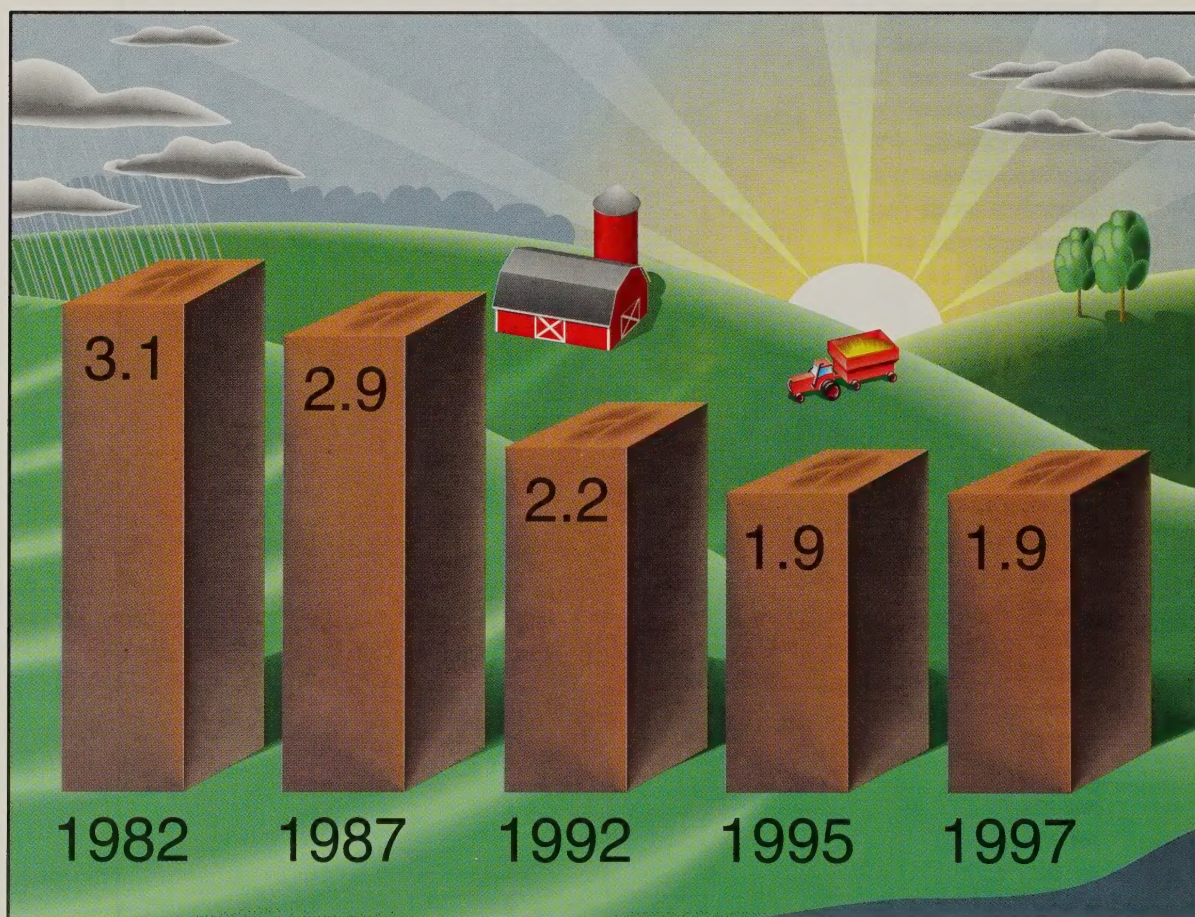
Excessive erosion continues to be a serious problem in many parts of the country. Over two-thirds of the 1.9 billion tons eroded annually occurs on just 29 percent of cropland (108 million acres). These 108 million acres were determined to be excessively eroding at rates of 1.3 billion tons per

year. This includes 57 million acres of fragile highly erodible cropland and nearly 51 million acres of non-highly erodible cropland.

Excessive erosion leads to concerns about sediments, nutrients, and pesticides impacting water quality, as well as air quality in wind erosion areas of the West, Midwest, Northern Plains, and Southern Plains. Excessive erosion rates indicate areas where additional conservation measures are needed and also where there are opportunities to improve soil quality and mitigate the effects of greenhouse gases in the atmosphere.

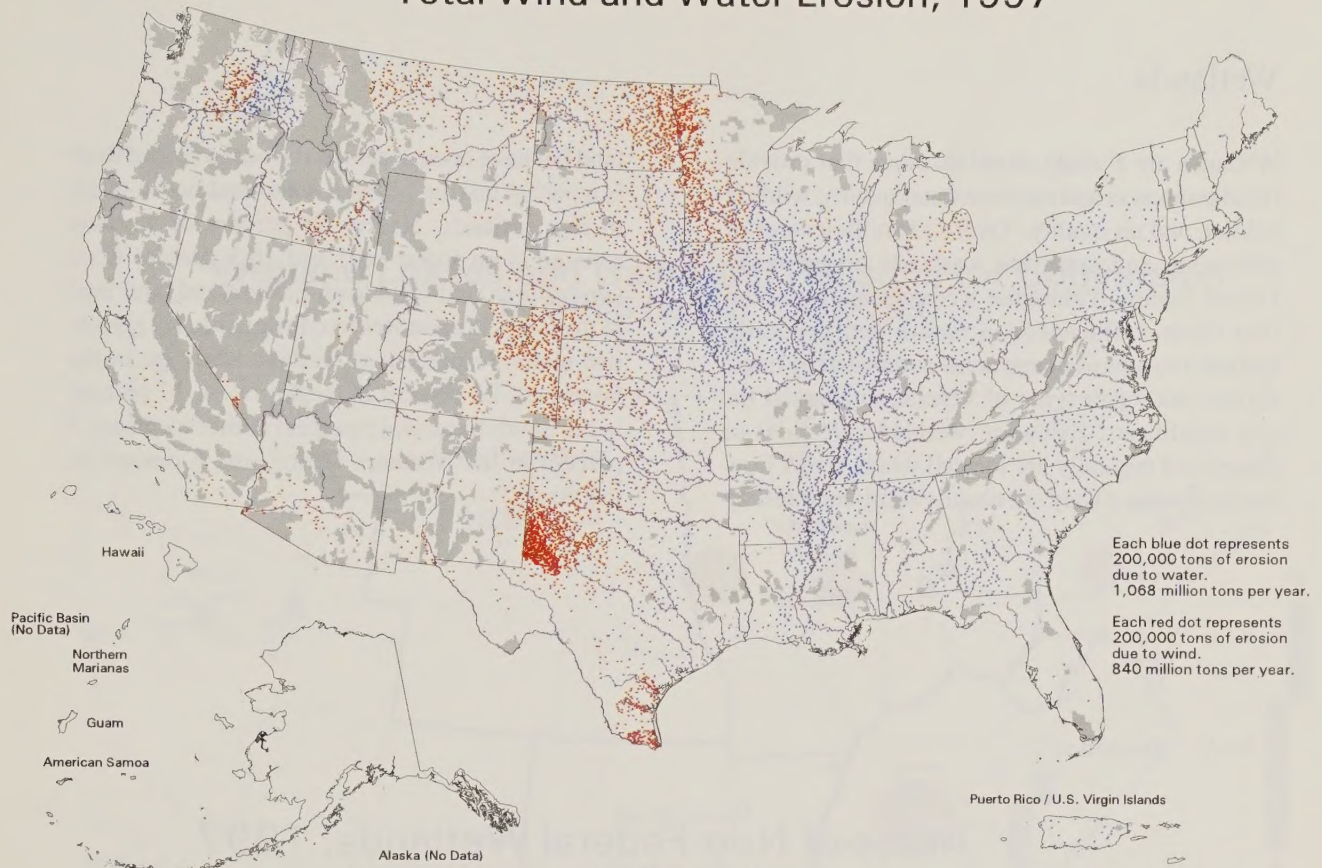
Erosion* on Cropland and CRP Land

Billions of Tons

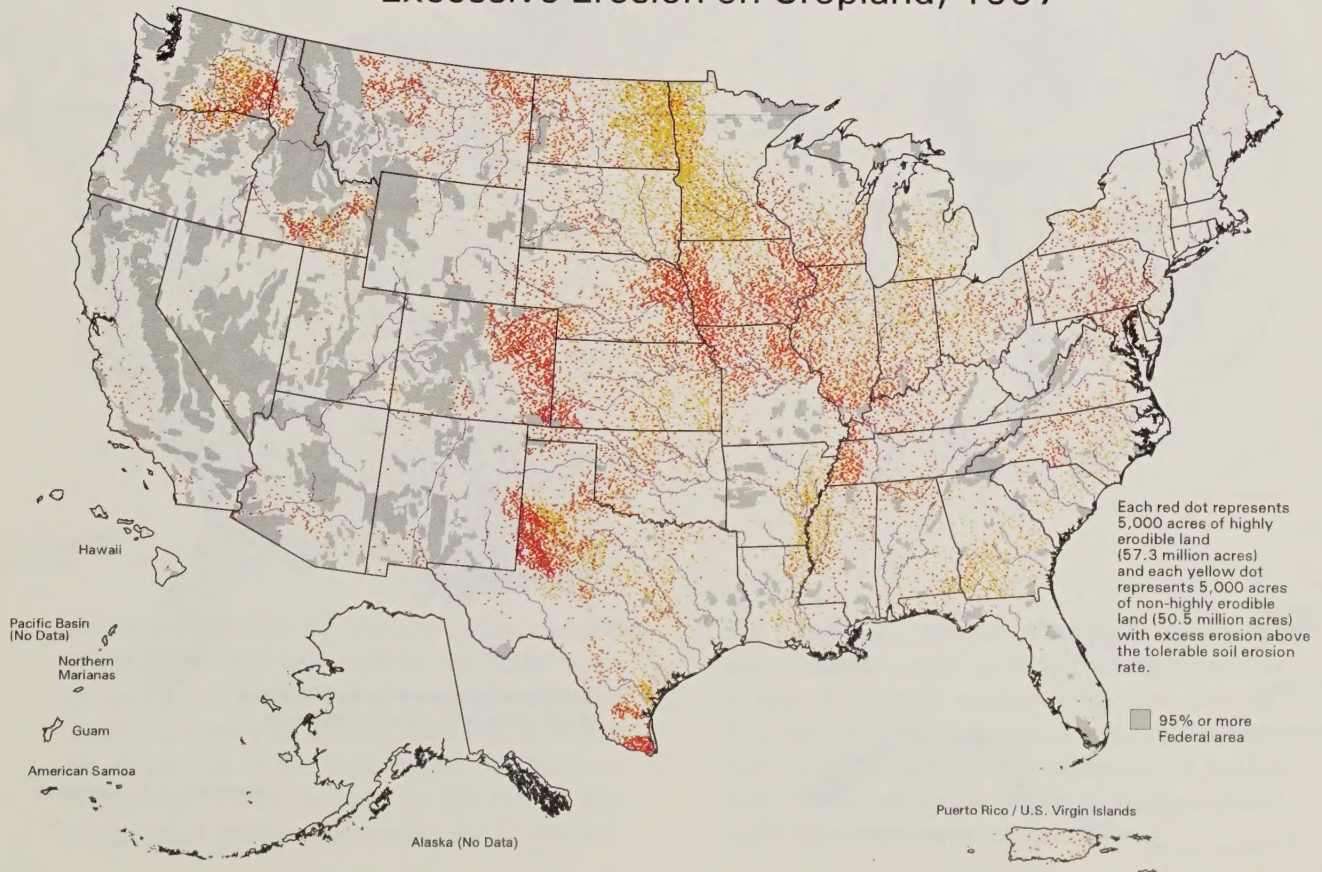


*Includes both wind and water (sheet and rill) erosion.

Total Wind and Water Erosion, 1997



Excessive Erosion on Cropland, 1997

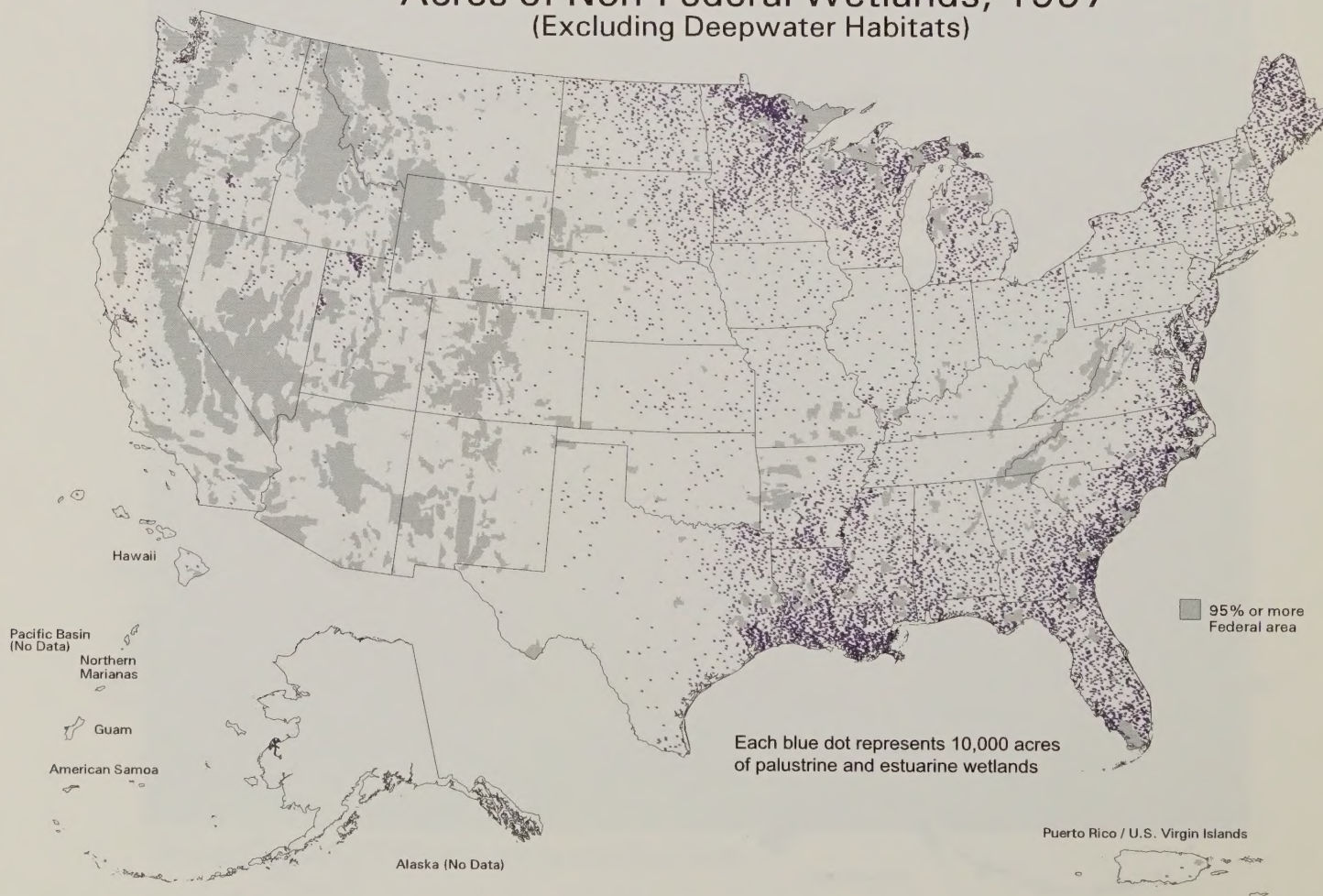


Wetlands

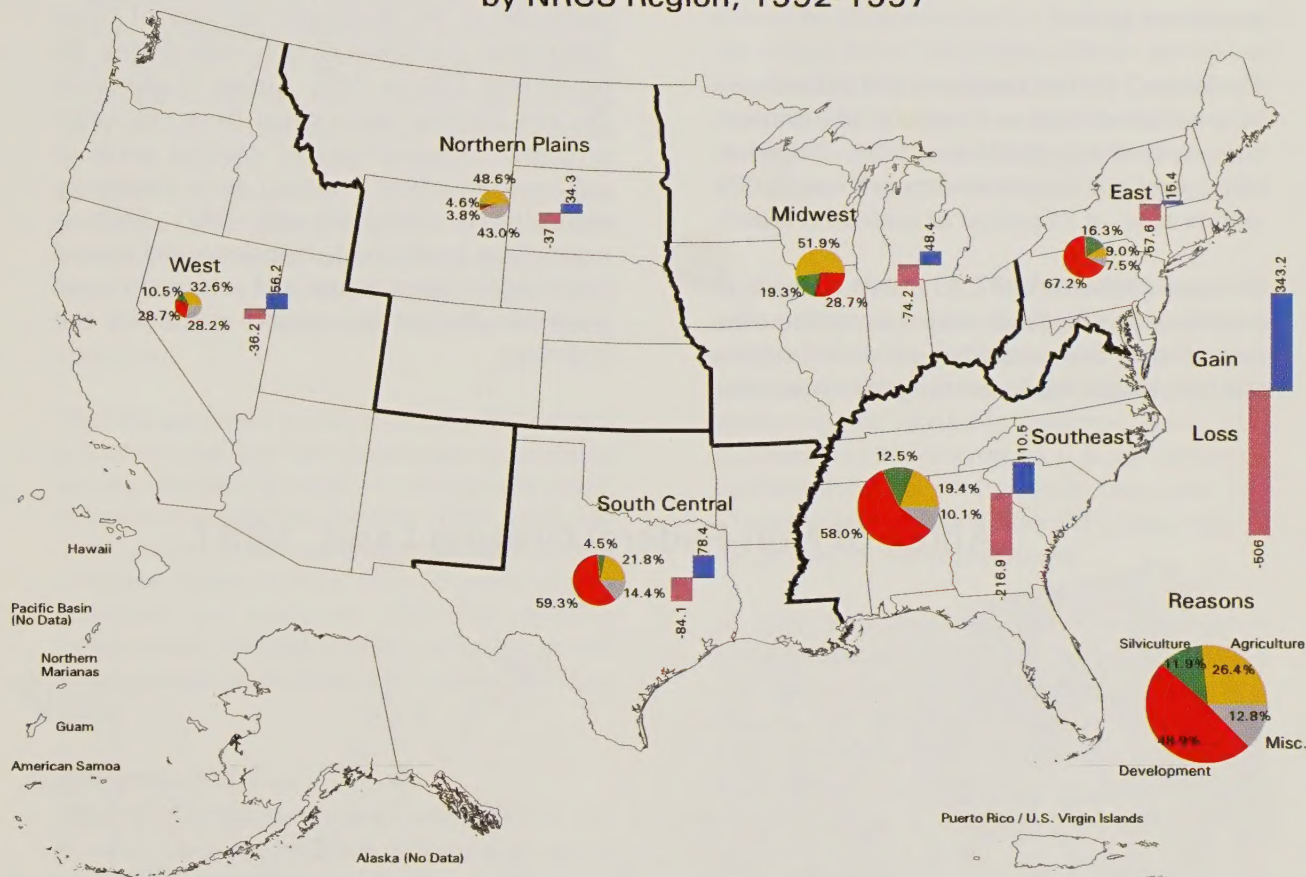
Wetlands are a vital natural resource that provide flood protection and enhance water quality, wildlife habitat, and air quality. Over 111 million acres of palustrine and estuarine wetlands occur in the United States. Palustrine wetlands are non-tidal (not ocean-influenced) in nature and generally include swamps or marsh areas dominated by trees, shrubs, and other types of vegetation adapted for wet conditions. Estuarine wetlands are tidal in nature and typically are located where rivers flow into the ocean. They are usually semi-enclosed by

land but have open access to the ocean so that there is a partial mixing of fresh water and ocean water in the wetland. Nearly 59 percent of wetland acreage is on forest land and 16.5 percent is on agricultural land (cropland, pastureland, and land in the Conservation Reserve Program). By region, just under 31 percent of wetland acres are in the Southeast, 24 percent in the Midwest, 17 percent in the South Central, 13 percent in the Northeast, 9 percent in the Northern Plains, and 6 percent in the West.

Acres of Non-Federal Wetlands, 1997
(Excluding Deepwater Habitats)



Wetland Losses and Gains and Reasons for Conversion, by NRCS Region, 1992-1997



For the period 1992-97, wetland losses averaged 101,000 acres per year with almost 69,000 acres gained, for an overall average annual net loss of 32,600 acres per year. Development was the reason for 49 percent of the total losses. Agriculture accounted for 26 percent of the losses and silvicultural practices accounted for 12 percent.

The remaining 13 percent of the losses were due to miscellaneous causes—over half of which were due to natural climatic variations, such as drought. Programs designed to restore or enhance wetlands, such as the Wetlands Reserve Program, as well as State, local, and private initiatives on agricultural lands, have resulted in reduced losses.

Grazing Lands

Maintaining and improving the amount and condition of grazing lands is important for providing vegetation for livestock and wildlife, protecting water quality and quantity, enhancing wildlife habitat and the landscape, and sequestering greenhouse gases.

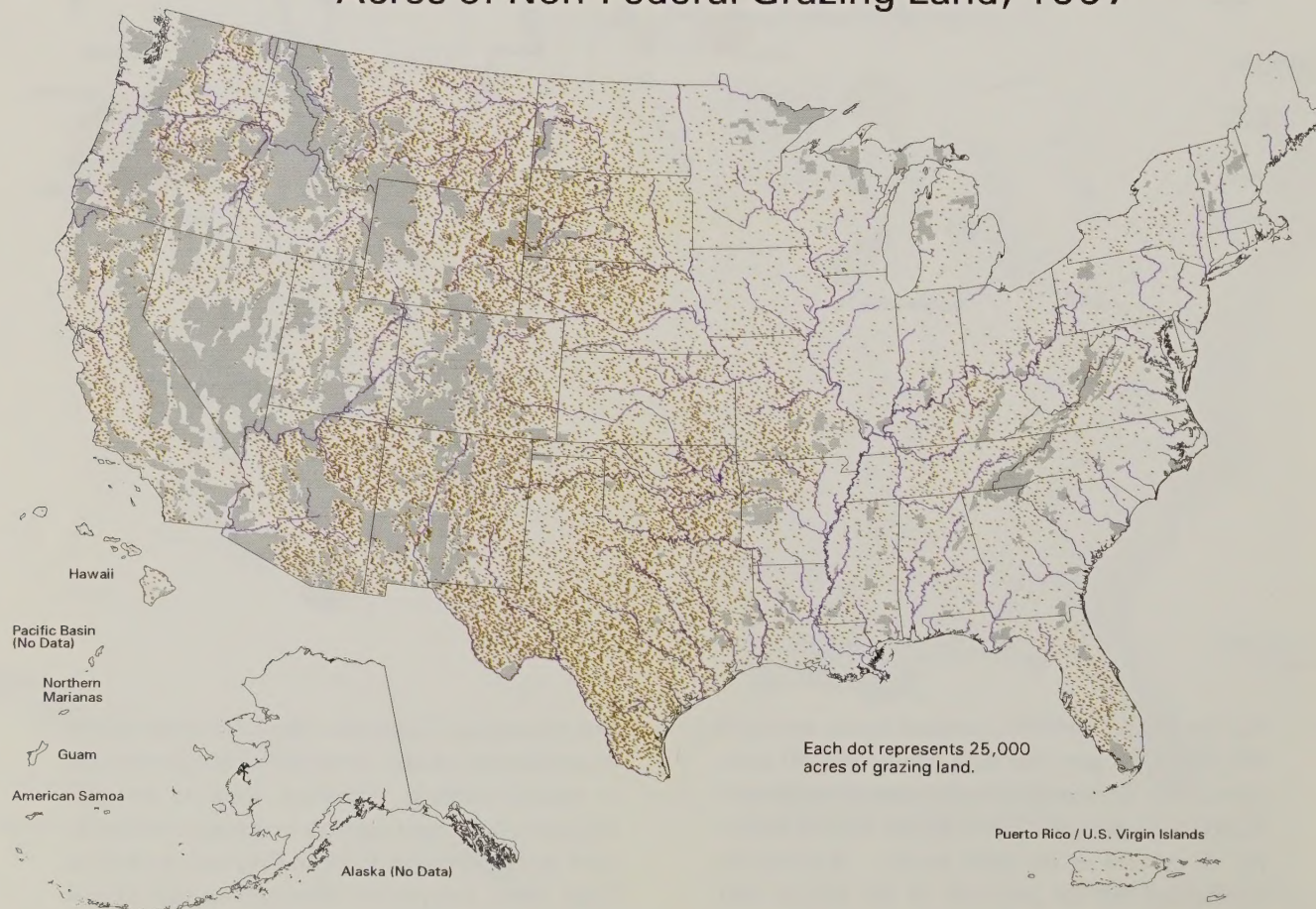
The Nation's grazing lands total 588 million acres of nonfederal land and include pastureland, rangeland, and grazed forest land. Together, pastureland and rangeland amount to nearly 526 million acres, or 35 percent of nonfederal land.

Between 1982 and 1997, 61.6 million acres of nonfederal grazing lands were converted to other uses. During this same time period, 34.1 million acres of new grazing lands were gained from other

uses. These land use changes resulted in a net loss of 27.5 million acres of the Nation's nonfederal grazing lands.

More than 8.1 million acres of the overall losses were due to development; the rate of these conversions continued to accelerate during the period from 1982 to 1997. Almost 53 percent of the new grazing lands came from cultivated cropland. Conversions of grazing lands to cultivated cropland occurred most frequently during the late 1980's and early 1990's. Shifts in usage from pastureland, rangeland, and grazed forest land to development and cultivation cause dramatic changes in resource condition and hydrology.

Acres of Non-Federal Grazing Land, 1997





National Resources Inventory: *Background*

The National Resources Inventory (NRI) is a compilation of natural resource information on nonfederal land in the United States—over 75 percent of the total land area.

Conducted by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) in cooperation with the Iowa State University Statistical Laboratory, this inventory captures data on land cover and use, soil erosion, prime farmland soils, wetlands, habitat diversity, selected conservation practices, and related resource attributes. Historically, data have been collected every 5 years from the same 800,000 sample sites. The NRI now covers all 50 States, Puerto Rico, the U.S. Virgin Islands, and some Pacific Basin locations.

The NRI provides a record of trends in the Nation's resources over time and documents conservation accomplishments as well. At each sample point, information is available for 1982, 1987, 1992, and 1997, so that trends and changes in land use and resource characteristics over 15 years can be examined and analyzed. The NRI provides information for addressing agricultural and environmental issues at national, regional, and State levels.

Purpose and Use

The NRI is conducted to obtain scientific data that is valid, timely, and relevant on natural resources and environmental conditions. Through legislation—the Rural Development Act of 1972, the Soil and Water Resources Conservation Act of 1977, and other supporting acts—Congress mandates that the NRI be conducted at intervals of 5 years or less.

Information derived from the NRI is used by natural resource managers; policymakers; analysts; consultants; the media; other Federal agencies; State governments; universities; environmental, commodity, and farm groups; and the public. These constituents use NRI information to formulate effective public policies, fashion agricultural and natural resources legislation, develop State and national conservation programs, allocate USDA financial and technical assistance in addressing natural resource concerns, and enhance the public's understanding of natural resources and environmental issues.

Seven Decades of Resources Inventories

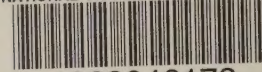
Hugh Hammond Bennett directed the pioneer National Erosion Reconnaissance Survey of 1934. This survey, the first well-documented nationwide resources inventory, estimated the degree of erosion caused by wind and water on the total land area of the United States. Six months after the survey was completed, Congress passed the Soil Conservation Act of 1935, which established the Soil Conservation Service (SCS), the forerunner of NRCS, and Bennett was named the agency's first chief.

By the early 1940's, SCS realized natural resources information was required to develop programs and set priorities for various conservation needs throughout the country. After assembling and analyzing the available resources data, SCS published in 1945 a report on U.S. soil and water conservation needs, which became the Conservation Needs Inventory (CNI) and prepared the ground for future inventories.

In 1956, SCS began a cooperative endeavor to maintain and update the CNI. Seven other USDA agencies assisted. Data were collected from sample areas for the 1958 CNI. It was the first time that SCS used statistical sampling to collect natural resources inventory data and the first time since 1934 that new data were actually collected in the field.

The 1967 CNI was an update of the 1958 CNI, but featured data collection at specific sample points within randomized sample units. This collection method simplified data collection and processing. By the mid-1970's, SCS had developed a way to link resources inventory data to soils data collected by the agency's nationwide soil mapping program, the National Cooperative Soil Survey.

The Rural Development Act of 1972 set guidelines for the present inventory program. The Act's language specified that information on urban sprawl and rural economic survival, prime farmland, flood plains, and conservation practices was needed to devise community guidance for balanced rural-urban growth. The Act also shortened the interval between resource inventories from 10 years to 5 years.



The 1977 NRI gathered data on soil erosion, wetlands, prime farmland soils, and flood-prone areas, as well as soil capability, land use, and conservation treatment needs. It used nearly 70,000 randomly selected sample areas and was statistically reliable to the State level.

The 1982 NRI was more comprehensive with respect to the kinds of data gathered and the number of sample areas covered. Its findings included the extent and distribution of highly erodible croplands throughout the Nation. It laid the groundwork for development of the Conservation Reserve Program and Conservation Compliance, Sodbuster, and Swampbuster conservation provisions of the Food Security Act of 1985.

The 1987 NRI initiated changes in how the data were gathered and analyzed. Previously, SCS employees collected data onsite and manually entered it onto worksheets. Almost 30 percent of the 1987 sample data was collected using remote sensing. SCS used trained teams to collect and enter data into computers. New software allowed SCS State offices to quickly deliver NRI data to the public.

The 1992 NRI relied heavily on remote sensing and computer-based technologies. Aerial photography was used, where available, to collect the new data, verify the 1982 and 1987 data, and fill in missing data for those years. The 1982 and 1987 databases were updated to current standards of technology, enabling SCS to establish and track trends in natural resource use and conditions over 10 years.

From 1995 to 1999, NRCS conducted special small-scale inventories to investigate topical matters of concern and supplement the foundation NRI. Data from these reports are statistically reliable for national and some regional analyses.

Data used for the most current NRI were collected using a variety of imagery, field office records, historical records and data, ancillary materials, and a limited number of onsite visits. Historical data were carefully reviewed. Data gatherers recorded information with the assistance of personal digital assistants and computer-assisted survey instruments. Data collected in 1997 enable an analysis of trends extending over 15 years.

Meeting Future Needs for Information

The NRI program is continuing to evolve as cost-effective methods are developed to collect more timely and relevant information that addresses emerging agri-environmental issues. New inventory approaches will incorporate new tools, methodologies, and technologies. The NRI is transitioning to a continuous inventory process, wherein data are collected annually. Efforts are underway to develop a multi-agency integrated inventory approach, incorporate various assessment tools for resource health, and more fully use inventory data for modeling and policy analysis.

For More Information

Contact the USDA Natural Resources Conservation Service or the NRI website at:

<http://www.nhq.nrcs.usda.gov/NRI>

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